

AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended) An ultrasound applicator for applying ultrasound energy to the thoracic cavity comprising

a housing sized for placement in acoustic contact with the thorax,

an ultrasound transducer carried by the housing comprising a transducer including a transducer face to generate ultrasound energy at a prescribed fundamental therapeutic frequency laying within a range of fundamental therapeutic frequencies not exceeding about 500 kHz, the transducer face having a periphery and a gravity plane,

a stand-off region spaced outward from and encircling the entire periphery of the transducer face for a set distance below the gravity plane to prevent direct contact between the transducer face and a skin region,

a flexible material overlaying the stand-off region defining a bladder chamber between the flexible material and the transducer face, the flexible material defining an acoustic contact area ~~contacting and conforming~~ adapted to contact and conform to the a skin region to transcutaneously conduct ultrasound energy in a diverging beam that substantially covers an entire heart,

an acoustic coupling media liquid confined within the bladder chamber, and

a well region extending outward about the entire periphery of the transducer face between the transducer face and the stand-off and at a position above the gravity plane to collect away from the transducer face, and without discharge from the bladder chamber, air bubbles forming in the acoustic coupling media liquid to minimize localized skin surface heating effects.

Claim 2 (Previously Presented) An ultrasound applicator according to claim 1

wherein the acoustic contact area has an effective diameter (D), and

wherein the transducer face has an aperture size (AP) not greater than about 5 wavelengths, wherein AP is expressed as $AP = D/WL$, where WL is the wavelength of the fundamental frequency.

Claim 3 (Currently Amended) An ultrasound applicator according to claim 1 or 2

further including an assembly adapted to be worn on the a thorax and adapted to be affixed to the housing, to stabilize placement of the housing on ~~the a~~ thorax during transcutaneous conduction of ultrasound energy.

Claim 4 (Original) An ultrasound applicator according to claim 1 or 2

wherein the range of fundamental therapeutic frequencies is between about 20 kHz and about 100kHz.

Claim 5 (Original) An ultrasound applicator according to claim 4

wherein the prescribed fundamental therapeutic frequency is about 27 kHz.

Claim 6 (Original) An ultrasound applicator according to claim 1 or 2

wherein the ultrasound transducer is sized to provide an intensity not exceeding 3 watts/cm² at a maximum total power output of no greater than 150 watts operating at the prescribed fundamental therapeutic frequency.

Claim 7 (Original) An ultrasound applicator according to claim 6

wherein the range of fundamental therapeutic frequencies is between about 20 kHz and about 100kHz.

Claim 8 (Original) An ultrasound applicator according to claim 7

wherein the prescribed fundamental therapeutic frequency is about 27 kHz.

Claim 9 (Original) An ultrasound applicator according to claim 1 or 2

wherein the housing is sized to allow another device to be placed on the thorax near the applicator.

Claim 10 (Original) An ultrasound applicator according to claim 9

wherein the device includes an ECG electrode device.

Claims 11 to 14 (Canceled)

Claim 15 (Currently Amended) A method for applying ultrasound energy to the thoracic cavity comprising the steps of

providing an ultrasound applicator as defined in claim 1,
placing the ultrasonic coupling region in acoustic contact with skin on ~~the~~ a thorax,
operating the ultrasound transducer to generate ultrasound energy, and
transcutaneously conducting the ultrasound energy through the acoustic contact area.

Claim 16 (Currently Amended) A method for applying ultrasound energy to the thoracic cavity comprising the steps of

providing an ultrasound applicator as defined in claim 2,
placing the ultrasonic coupling region in acoustic contact with skin on ~~the~~ a thorax,
operating the ultrasound transducer to generate ultrasound energy, and
transcutaneously conducting the ultrasound energy through the acoustic contact area.

Claim 17 (Previously Presented) A method according to claim 15 or 16 further including the step of stabilizing the placement of the housing on the thorax.

Claim 18 (Original) A method according to claim 15 or 16 wherein the housing is placed on the chest or near the sternum.

Claim 19 (Original) A method according to claim 15 or 16 wherein the range of fundamental therapeutic frequencies is between about 20 kHz and about 100kHz.

Claim 20 (Original) A method according to claim 19 wherein the prescribed fundamental therapeutic frequency is about 27 kHz.

Claim 21 (Original) A method according to claim 15 or 16 wherein the ultrasound transducer is operated to provide an intensity not exceeding 3 watts/cm² at a maximum total power output of no greater than 150 watts operating at the prescribed fundamental therapeutic frequency.

Claim 22 (Original) A method according to claim 21 wherein the range of fundamental therapeutic frequencies is between about 20 kHz and about 100kHz.

Claim 23 (Original) A method according to claim 22 wherein the prescribed fundamental therapeutic frequency is about 27 kHz.